

We Claim:

1. A method for making agglomerate particles comprising the steps of:
  - a. forcing a composition comprising a radiation curable polymerizable binder precursor and a plurality of solid particulates through a perforated substrate to form agglomerate precursor particles; and
  - b. separating the agglomerate precursor particles from the perforated substrate; and
  - c. irradiating the agglomerate precursor particles wherein radiation energy is transmitted from a radiation energy source to the agglomerate precursor particles to at least partially cure the binder precursor to provide agglomerate particles.
2. A method according to claim 1, wherein the agglomerate particles are collected after the irradiation step.
3. A method according to claim 1, wherein the irradiation step comprises a step of passing the agglomerate precursor particles into a first curing zone that contains the radiation source.
4. A method according to claim 1, wherein the agglomerate particles are passed through a second curing zone, wherein energy is transmitted from an energy source to the agglomerate particles to further cure the agglomerate particles.
5. A method according to claim 1, wherein the binder precursor comprises epoxy resins, acrylated urethane resins, acrylated epoxy resins, ethylenically unsaturated resins, aminoplast resins having pendant unsaturated carbonyl groups, isocyanurate derivatives having at least one pendant acrylate group, isocyanate derivatives having at least one pendant acrylate group or combinations thereof.
6. A method according to claim 1, wherein the plurality of solid particulates comprise fillers, plastic particulates, reinforcing particulates, inorganic binder precursor particulates, anti-static agents, lubricants, pigments, suspending agents or combinations thereof.

7. A method according to claim 1, wherein the agglomerate particles are filamentary shaped and have a length ranging from about 10 to about 1500 micrometers.

5 8. A method according to claim 7, wherein the length of the agglomerate particles is in a range from about 20 to about 800 micrometers.

9. A method according to claim 8, wherein the length of the agglomerate particles is in a range from about 50 to about 400 micrometers.

10 10. A method according to claim 1, wherein the agglomerate particles have a substantially constant cross-sectional shape.

11. A method according to claim 10, wherein the cross-sectional shape comprises circles, polygons or combinations thereof.

12. A method according to claim 1, wherein the agglomerate precursor particles further comprise a modifying additive.

13. A method according to claim 12, wherein the modifying additives comprise coupling agents, grinding aids, fillers, inorganic binder precursors, surfactants or combinations thereof.

15 14. A method according to claim 1, wherein the step of forcing the composition through the perforated substrate to form the agglomerate particles comprises methods of extrusion, milling, or calandering.

20 15. A method according to claim 1, wherein the radiation source comprises electron beam, ultraviolet light, visible light, laser light or combinations thereof.

16. A method according to claim 3, wherein the radiation source comprises electron beam, ultraviolet light, visible light, laser light or combinations thereof.

25 17. A method according to claim 4, wherein the energy source comprises electron beam, ultraviolet light, visible light, microwave, laser light, thermal or combinations thereof.

18. A method according to claim 1, wherein steps (a), (b), and (c) are performed sequentially and continuously.

30 19. A method according to claim 1, wherein the process components in steps (a), (b), and (c) are spatially oriented in a vertical and consecutive manner.

20. A method according to claim 19, wherein steps (a), (b), and (c) are performed sequentially and continuously.

21. A method according to claim 1, wherein the plurality of solid particulates comprise from 5 to 95% by weight of the composition.

5 22. A method according to claim 21, wherein the plurality of solid particulates comprise from 40 to 95% by weight of the composition.

23. A method according to claim 1, wherein said composition is 100% solids.

24. A method according to claim 1, wherein a size reduction step is performed on the agglomerate particles after the irradiation step.

10 25. A method according to claim 4, wherein a size reduction step is performed on the agglomerate particles after being passed through the second curing zone.

26. A method according to claim 24, wherein the size reduction step comprises the methods of milling, crushing and tumbling.

15 27. A method according to claim 25, wherein the size reduction step comprises the methods of milling, crushing and tumbling.

28. An agglomerate particle made according to claim 1.

29. An inorganic aggregate precursor agglomerate particle made according to claim 1.

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